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Agent for Automating Educational Institutes as a Single Entity: Schools' Coordination System

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Abstract

Services and processes require much effort for executing in manual ways. Customized-Service Oriented Architecture is currently a very large source for automating services of different organizations. Educational Institutes and Schools, which are the part of the original nature of man to live, cooperate and grow with others. Transfer of parents becomes a major problem for children education. School's services required a system which can connect all branches on different places to remove transferring problem for a person. SCS (School Coordination System) is a CSOA based application which can provide different services (letter transaction, lecture plane, transfer of student from one branch to other branch with in no time). So student gets feel free after migrating the school. SCS will also provide a medium between parents and school to check the progress of his child.

Keywords: SOA, CSOA, SCS, Service

1. Introduction

Already most of the features of SCS are implemented in Online Distance Learning. The Internet and the World Wide Web (WWW) have made the process of obtaining an education without regard to time or location easier for the student. At the same time, they have provided more challenges for the colleges providing this education. In online distance learning, not only does the instruction occur via a computer system, usually over the Internet, but other educational processes occur via the computer as well. These educational processes are student services, training, and support [6].

Some of the newest methods of distance learning (DL) uses the Internet and the World Wide Web. DL on the Internet usually takes one of the following forms: electronic mail; bulletin boards/newsgroups; downloading of course materials or tutorials; interactive tutorials on the Web; real-time, interactive conferencing; "intranets" (internal, limited-access websites); or informatics [7].

Virtual education refers to instruction in a learning environment where teacher and student are separated by time or space, or both, and the teacher provides course content through course management applications, multimedia resources, the Internet, videoconferencing, etc. Students receive the content and communicate with the teacher via the same technologies [8].

Few educational principles are actually being implemented to improve the courses. Obviously, we recognize the enormous potential that telecommunications technologies offer for expanding education but we cannot be sure about the quality. Aim of author is to improve not only specific virtual education areas, but also the whole educational approach as a system [9].

School life, as the most powerful social medium for the development of the character and the whole personality of the pupils, cannot therefore be left to chance operation. We were running manual system for our schools coordination on different places. So of that it was very cumbersome to organize and do all activities in best possible way. Due to this drawback we are now going to connect our schools system of same organization that will automate main services: which are Student registration, Syllabus, Daily Diary dispatch transactions, Transfer/Move to other school, School Leaving Certificate

As there is great chance of error while entering controlling and managing data manually. To work arrangement being carried out in school office not trustworthy due to following factors.

1.1. Delay in retrieval of information

Retrieval of required information takes too much time. No standardized program for data is present for the user. Most of the time has to use their own different methods for generation information.

1.2. Lack of the Information

Although office staff is performing the task at their level best yet no coordination or inter link is present proper update of record. We have different modules like student registration, deletion, syllabus etc. Individual files are update separately which causes redundancy and wastage of time for updating.

1.3. Lack Of Data Security

Access to data information has not been protected from unauthorized users. So there is lack of security.

Customized SOA application SCS, is very useful for achieving above targets.

2. Customized SOA

Service is an independent deployment and versioning and encapsulated piece to communicate with other components. CSOA terms concluded from SOA (service oriented architecture). Loosely coupled features of SOA (provide global services) is the major base for CSOA (local services). SOA work on component based architecture. So building an SOA includes ESB (Enterprise Service Bus) [2]



Fig-1 SOA Work Flow

Becoming more agile, driving cost reductions, simpler systems, enhancing architectural flexibility, lowering integration costs are the major advantages of SOA [3]. CSOA based application provides only services to an organization.

3. Structure of SCS

The purpose of this proposal is to analyze and define high level needs and features of the SCHOOL COORDINATION SYSTEM. Its focus is on the capabilities needed by the users of Administrator and Clients. Our CSOA application (SCS) can work in the education domain. This is basically Coordination of School System. From our application authorized client user and Administration of the department will take the benefits.

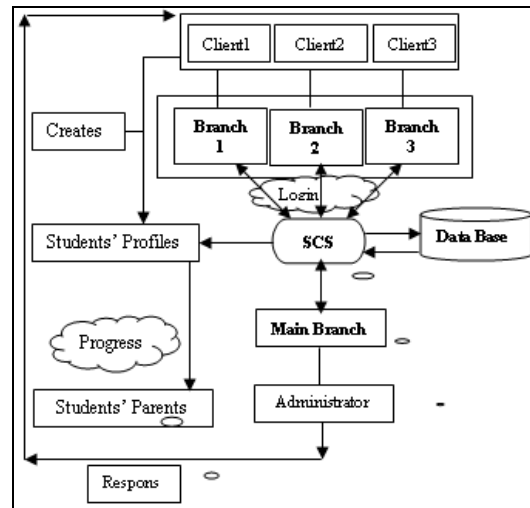


Fig-2: Structure of SCS

Fig-2 shows that, all clients and administrator will be connected through SCS interface. All branches can send different queries as service to administrator and administrator can execute those queries. All records, letters etc will be stored in central database, so clients and administrator can take different reports from this database. Each client can send a query to administrator for other client and vice versa. There will be a separate profile for each student, which will be automatically created at the time of registration of a student from client side. Password of student's profile will be given to the parents of a student. So they can check the progress (results, attendance, presentation etc) of his son/daughter and can furnish various suggestions to the teachers. Through SCS, this profile will be a communicative interface between school and parents.

4. Implementation of SCS

SCS is developed in ASP.Net and SQL-Server. ASP.NET is used to create web pages & web technologies and is an integral part of Microsoft's .NET framework vision. As a member of the .NET framework, ASP.NET is a very valuable tool for programmers and developers as it allows them to build dynamic, rich web sites and web applications using compiled languages like VB and C# [4]. Microsoft SQL Server offers tight integration with the Back Office series of server products. Check out this collection of SQL Server links about migrating to SQL Server, performance tuning, development and etc [5].

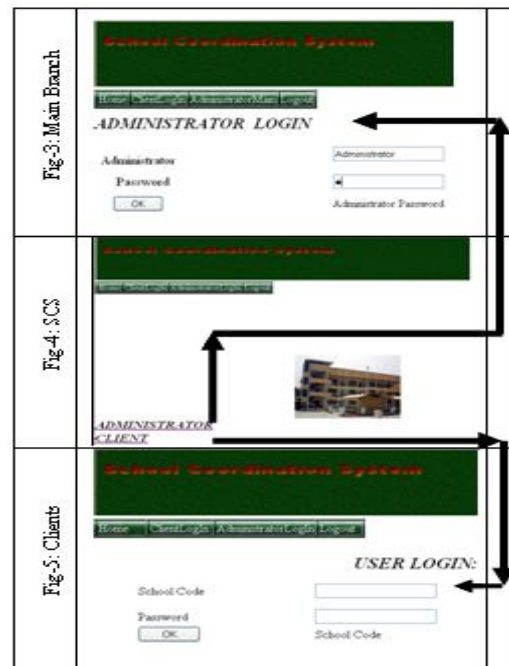


Fig-4 shows the major layout of SCS, through which main office administrator and clients on different locations can get and set their required services. Here suppose we are setting the schools of Genius Intelligence organization on different location. After administrator login on Fig-3, Fig-6 shows administrator major services.

ADMINISTRATOR'S MAIN FEATURE		
Home ClientLogin AdministratorMam Logout		
	SET-UP FORM	TRANSACTION
W	Set New City	View Query From Client And Reply
E	Set School Location	View His Own Reply
L	Set Subjects	New Query To Client
C	Set Syllabus	View Reply From Client
O		Letter No
M	STUDENT RECORD	
E	List Of Registered Students	
	Print Old Student Record	
	School Leaving Certificate	

Fig-6: Major Services for Administrator.

Administrator will click on 'set school location' service for creating new schools. This data will be stored in central database

School Coordination System

[Home](#) [Client Login](#) [Administrator Main](#) [Logout](#)

Entry of New School and Location

School Code:
City Name:
School Name:
School Location:
Password:

Already registered Schools

	schoolcode	citycode	schoolname	schoollocation	password
1	1		Genious Intelligence	Draban Road	
2	2		Genious Intelligence	Shah Road	

Fig-7: New School Set by Administrator.

After the registration of new school on SCS by main office, now any client school can login through SCS and can use its services. School code 1 login through SCS as shown in Fig-5, then all services for school code 1 will be appear on SCS.

School Coordination System

1 D.I.Khan Genious Intelligence

SET-UP FORMS

[Set Student Registration](#)
[Update Student Information](#)
[Set Student Class](#)
[Client View Syllabus](#)
[Changed School Information](#)
[Print School Leaving Certificate](#)

TRANSACTION

[Sending Queries To Administration](#)
[View Reply From Administration](#)
[View Query From Administrator And Reply](#)
[Client View His Own Reply](#)
[Client's Letter No](#)

Fig-8. Client's Services. (Services for School Code-1).

This Fig-8 shows the services for school code 1, Genius Intelligence, D.I.Khan branch. Now students at D.I.Khan branch can be registered over here. Similarly each client (branch) can registered his students through SCS after authentication shown Fig-5. Suppose school code 1 is registering the different students. This data will be stored in central database and can be used by administrator.

STUDENTS REGISTRATION FORM

1 D.I.Khan Genius Intelligence

Reg No:

Student Name:

Father Name:

Address:

Phone No:

Date:

Date Of Birth:

regno	schoolcode	stdname	fname	address	phoneno	Dateee	dateofbirth
1	1	M. Ahsan	Majid Khan	Main Jinh Road	23453	12/12/2010	11/10/1995
2	1	M. Jall	Akhter Gul	Jirga Road	2356	12/11/2010	10/11/1995

Fig-9. Students Registration.

Now administrator can print the report of registered students through service “list of registered students” as shown in above Fig-6.

LIST OF REGISTERED STUDENT

School Code: Class:

School's Coordination System

Registered Students

Reg No	Name	Father Name	Address	Phone No	Reg Date	Date of Birth
1	M. Ahsan	Majid Khan	Main Jinh Road	23453	12/12/2010	11/10/1995
2	M. Jall	Akhter Gul	Jirga Road	2356	12/11/2010	10/11/1995
3	Saqib Gul	Bashir Gul	Jinah Park	48867	13/11/2010	17/11/1995

Fig-10. List of Students to Administrator.

This figure shows the record of registered students at school code 1 of class 1st. Here administrators can print the data of all students of any class at any branch.

Now administrator will set the daily lecture plan for all schools, so same class at different locations will be studied the same topic on same day. Administer click on ‘set syllabuses’ service as shown in Fig-6.

SYLLABUS INFORMATION

Class:

Subject Name:

Semester	Chapter
Semester 1st	15/1/2011 chapter-1 16/1/2011 chapter-2 17/1/2011 chapter-3
Semester 2nd	15/2/2011 chapter-4 16/2/2011 chapter-5 17/2/2011 chapter-6
Semester 3rd	15/3/2011 chapter-7 16/3/2011 chapter-8 17/3/2011 chapter-9

Fig-11. Setting Syllabus by Administrator.

Fig-11 shows the lecture plan for English subject of class 1st. , now each client of each branch can print this syllabus through SCS after authentication. Suppose school code 1 prints this syllabus through ‘Client

View Syllabus' service as shown in above Fig-8.

Subject Code	Class	Subject Name
1	1st	English
Semester 1st		
		15/1/2011 chapter-1
		16/1/2011 chapter-2
		17/1/2011 chapter-3
Semester 2nd		
		15/2/2011 chapter-4
		16/2/2011 chapter-5
		17/2/2011 chapter-6
Semester 3rd		
		15/3/2011 chapter-7
		16/3/2011 chapter-8
		17/3/2011 chapter-9

Fig-12: Syllabus Report

This figure shows the lecture plan for English of 1st class to school code1. Through SCS, any student can transfer from one school to other of home organization or can take school leaving certificate for taking admission in other school of different organization with in little bit of time.

Major problem for student's father is the job transfers, because it is very hard for student to change his school during running semester. If student take admission in school of same organization at new place, then his study can not be disturbed because all schools are following the same lecture plan through SCS. And fathers get fell free to join his job on different places every where at any time.

Suppose registration no-1 student move from school code-1 to school code 2, then first of all Scholl code 1 will send a letter to admin with service 'Sending Query to Administration' as shown in Fig-8. Then following interface will be appeared to school code-1.

Home ClientLogin AdministratorLogin Logout

CLIENT SENDS QUERY TO ADMINISTRATOR

D.I.Khan Genius Intelligence

Letter No: 1

Date: 1/3/2011

Subject: School Transfer

Description: Transfer Reg-ONE from

SEND

Fig-13. Sending Query to Administrator.

In Fig-13 school code 1 is sending a query to administrator with dispatch no 1. Now administrator can executes this query by reading this letter no 1 from service 'View Query from Client and Reply' as shown in Fig-6.

Now administrator can change the school of student Reg No 1 with the service 'School Leaving Certificate' as shown in Fig-6. Through following interface as shown in Fig-14, administrator can send a permission letter to school code 1 for transferring student Reg No. 1 or can send a school leaving certificate. If check box on Fig-4 is checked, then it means administrator is sending a transfer letter to school code 1, if is unchecked then it means administrator is sending a school leaving certificate to school code 1.

Fig-14. Administrator is Sending Permission Letter.

Now student Reg-No 1 will take a permission letter from School code 1 and submit this letter to school code 2 of Genius Intelligence. Fig-15 show that school code 1 is printing this permission letter for Reg No 1 through 'Print School Leaving Certificate' service as shown in above Fig-8.

Reg No	Name	Father Name	Address	Phone No	Class
1	M. Abid	Majid Khan	Main Jinah Road	23453	1st

Fig-15. Permission Letter for Changing School from Administrator to Client.

Now Student Reg No 1, will take this permission letter from school code 1 and will submit it to school code 2. Then school code 2 will register this student to their school (school code 2) through the service 'Changed School Information' as shown in Fig-8.

Fig-16 will appear to school code 2 after the authentication as shown in Fig-5.

Fig-16 Student is Transfer to New Branch.

Now student Reg No. 1 can easily start his study in same class of new branch with out any confliction. Fig-17 is showing that Reg No 1 has been registered to school code 1.

Registered Students						
1/3/2011						
School Code		2	City		Tank	
Class		1st	School Name		Genius Intelligence	
Reg No	Name	Father Name	Address	Phone No	Reg Date	Date of Birt
1	M. Ahd	Mahd Khan	Man Jiah Road	2345	12/12/2010	11/10/1995
4	Imiaz Khan	Hinat Gul	Jiya Road	3456	12/12/2010	12/12/1996
5	Riaz Khan	Majed Gul	Tanka Road	5475	12/12/2010	12/12/1996

Fig-17. Registered Students at School Code 2 in Class 1st.

5. Conclusion

Coordination of school system will replace the existing old fashioned, tedious and independent process for school process which already exists in the school.

This system is basically and independent module which can be integrated with other modules.

- To allow the administration to see the list of registered students in the different school.
- Each authorized client will be able to access from any remote location in contrast to the manual system.
- Information regarding to the total school in the school and available data at any time is present online.
- Every record will be on the finger tips of the client and client will easily manage matters of schools which was not easy on the existing system.
- Through our system the students can easily move/transfer to the other branch of the existing school.

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